



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,214	07/12/2004	Wolfram Schindler	WAS0643PUSA	3821

22045 7590 10/05/2005

BROOKS KUSHMAN P.C.
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075

EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/501,214

Applicant(s)

SCHINDLER ET AL.

Examiner

Marc S. Zimmer

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13, 17-20 and 22-25 is/are rejected.
- 7) ☒ Claim(s) 14-16 and 21-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Information Disclosure Statement

The information disclosure statement filed July 12, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the foreign patent references^{+ NPL references} referred to therein have not been considered.

Claim Objections

Claims 22-25 are objected to because (i) Applicant refers to a compound adhering to a formula (2) but then displays a formula (1) and (ii) there is no full description of formula (ii). In particular, R^1 , R^2 , and "a" are undefined. Correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 22-25 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process of reacting a prepolymer with an isocyanatosilane wherein a specified fraction of the latter has two non-hydrolyzable organyl radicals attached to silicon besides the isocyanatomethyl group, does not reasonably provide enablement for a process of reacting a prepolymer with an isocyanatosilane wherein the aforementioned proviso is not attached. The specification

Art Unit: 1712

does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. In any discussion of the reaction of an isocyanatosilane with a polymer material, it is stipulated that at least 5% of the isocyanatosilane must be of a structure wherein two non-hydrolyzable organyl radicals besides the isocyanatomethyl group are attached to silicon. Indeed, this seems to be an important aspect of Applicant's invention yet claim 22 permits the employment of an isocyanatomethyl-functional silane having any number of hydrolyzable groups. Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Majolo et al., U.S. Patent # 6,790,903. Majolo discloses a polymer dispersion comprising at 60% by weight of an organic polymer bearing hydrolyzable silyl group-containing residues adhering to formula (I) in column 2. Relevant to the present discussion, Majolo expressly contemplates embodiments where the variable "A" is a methylene group. Organic polymers containing these groups may include any of those mentioned in lines

Art Unit: 1712

41-51 of column 2. A favored embodiment is that where the organic polymer is a polyurethane derived from the three reactants outlined at the top of column 3. The silane moiety is introduced at the ends of the polyurethane by reacting the silane (II) with an isocyanate-terminated polyurethane prepolymer (column 7, lines 25-29). In other preferred embodiments (column 8, lines 66-67 through column 9, lines 1-18), an isocyanatomethyl-substituted alkoxysilane (wherein "A" = CH₂) is reacted with a polyester- or a polycarbonate polyol which, of course, would yield divalent linker groups corresponding to O-CO-NR³-. Silane-terminated polyamides and polyacrylates are also contemplated therein.

Claims 7-13, 17-20, and 22-25 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 02/077072.

Schindler et al., disclose the preparation of polysiloxane-urethane copolymers terminated at each end with a hydrolyzable silyl group wherein the copolymers are prepared by reacting together compounds adhering to the formulae (3) through (6) disclosed on page 9 of the disclosure. Relevant to the present discussion, one of the compounds (5) volunteered on page 12 is isocyanatomethyldimethyl(m)ethoxysilane.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Allowable Subject Matter

Claims 7-21 are considered to be allowable over Majolo et al. In Applicant's Examples section they compare the properties obtained for polymers differing only in either (i) the length of the hydrocarbon spacer bridging the silane moiety to the end of the polymer backbone or (ii) the substitution pattern at silicon, i.e. the number of hydrolyzable substituents appended to the silicon endgroup. It is clear from Table 1 that, where the spacer moiety is a methylene group and there is only a single hydrolyzable substituent bonded to carbon, an array of properties of a cured elastomer derived from the self-crosslinkable polymer are simultaneously improved. This is significant because the claimed invention is not anticipated by the *Majolo* in the Examiner's estimation.

Majolo allows that the spacer group may be one of many aliphatic or aromatic linear, branched, or cyclic divalent hydrocarbon residues of which a methylene group is but one example. The number of possibilities is multiplied when one considers that the number of non-hydrolyzable groups "Z" may equal 0-2. It was also taken into consideration that *Majolo* doesn't provide a single specific embodiment of the isocyanatosilane where the number of non-hydrolyzable groups is more than zero. Indeed, a broader survey of the art yielded not more than a handful of references that disclosed the use of isocyanate-functional silanes having even one non-hydrolyzable group other than the isocyanate-containing residue and, in most of these, the only spacer group mention was a propylene group whereas the present claims require a methylene group. The polymers claimed by Applicant are, at best, obvious in view of the teachings of *Majolo* and Applicant has demonstrated by way of Example and

Art Unit: 1712

property measurements that these structural parameters are critical thereby obviating a 35 U.S.C. rejection over Majolo.

Claims 14-16 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The entire focus of WO 02/077072 is the preparation of the polymers themselves. Although, there is some contemplation of the applications of these materials, their mention alone does not motivate the combination of the polymer with an amine catalyst.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marc Zimmer
Marc Zimmer
AU 1712